

STANFORD

UNIVERSITY

OFFICE OF

TECHNOLOGY

LICENSING

# START-UP GUIDE



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Stanford University is frequently the place where the kernel of an idea for a new company takes root and begins to grow. For more than half a century, Stanford has been the source of ideas and discoveries – educating entrepreneurs and fostering breakthrough technologies. Visitors from all over the country and the world come to Stanford to find the secret of Stanford’s entrepreneurial success. The secret, of course, is that there is no secret. It’s a mindset. It’s an approach. It’s the Stanford culture. As many people have observed about Stanford, “it’s ok to experiment” – and to fail. It’s also ok to be successful, wildly successful.

This guide is intended for Stanford faculty, staff, and students interested in launching a start-up company based on intellectual property that is owned by the University. It is a broad overview of the start-up process and provides background on resources available for Stanford entrepreneurs. Certain sections contain information derived from “An MIT Inventor’s Guide to Startups: For faculty and students.” This guide was written in December 2012 and updated in March 2016. Stanford’s policies and practices may be revised from time to time. Inventors should refer to Stanford’s Research Policy Handbook ([rph.stanford.edu](http://rph.stanford.edu)) for current guidelines on intellectual property, conflict of interest and commitment and other issues. Additional information may be found on the Office of Technology Licensing (OTL) website: [otl.stanford.edu](http://otl.stanford.edu) or by contacting our office at 650-723-0651.

# Overview

**In the last several decades, over 6,000 companies were founded by members of the Stanford community. Most of these businesses, including Hewlett-Packard and Yahoo!, were started by Stanford faculty and students but did not use intellectual property owned by the University. Other start-up companies were formed to commercialize inventions that are subject to the intellectual property policies of Stanford University – founding technologies that were created with more than incidental use of Stanford resources or in the course of the inventors’ institutional responsibilities for research and education.**

With all of this entrepreneurial activity, some people are surprised to learn that historically only about 8-12 OTL licenses per year (approximately 10% of its total licenses) are to start-up companies. However, the pace of start-up licenses seems to be increasing in recent years, with start-ups comprising over 20% of licenses in 2014 and 2015. Some examples of start-ups based on intellectual property owned by Stanford and licensed through the Office of Technology Licensing (OTL) include:

- Alexo Therapeutics
- Amati Communications (acquired by Texas Instruments)
- Amprius
- Capp Medical (acquired by Roche)
- Circuit Therapeutics
- Coverity (acquired by Synopsis)
- Forty Seven
- Google
- Oculeve (acquired by Allergan)
- Tableau Software
- Verinata Health (acquired by Illumina)

Whether OTL is licensing to a start-up company or an existing company, Stanford’s goal is to maximize the chances of successfully transferring the technology while prioritizing the University’s missions of research and education. This obligation is the shared responsibility of OTL and the start-up entrepreneurs, especially if they expect to maintain connections to the University (as faculty, staff or students) during the creation of the start-up or after it is launched. This guide summarizes some of these responsibilities and Best Practices (see pages 28–34), but individuals are expected to know and follow Stanford’s policies about conflict of commitment and conflict of interest and related matters. These policies and procedures can be found at [www.stanford.io/coi](http://www.stanford.io/coi).

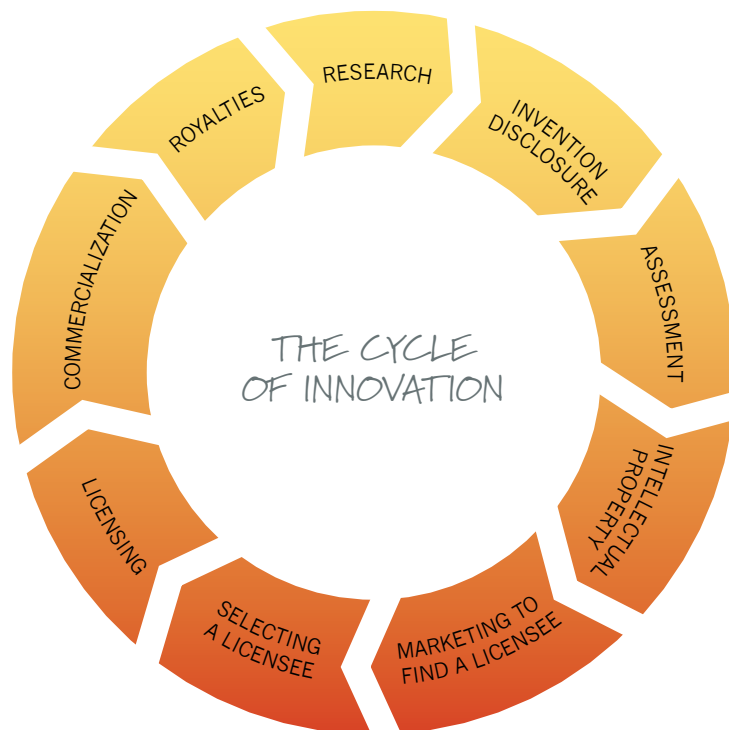
OTL realizes that most Stanford technologies are early stage and require a significant investment to bring them to the marketplace. To do this, start-up entrepreneurs must have a passion that borders on irrational optimism and faith in the technologies along with an eagerness to commit their own time and resources to develop these inventions. OTL is willing to negotiate with new companies to craft an agreement that is consistent with other licenses and can help them succeed. We do not claim to know which new ventures will be successful – that’s left to luck and hard work – but we want to work with these new companies so they can get a start.



# Technology Transfer at a Glance for Start-Ups



The technology transfer process at Stanford can be conceptualized as a continuous cycle—one where discoveries in the laboratory are developed into licensed products in the marketplace that then help fund the next generation of research and innovation. For the most part, the steps of the cycle are similar whether the company commercializing the technology is a new venture or an established one.



Here we've highlighted some of the steps that may be particularly relevant to entrepreneurs starting a new venture based on Stanford intellectual property. OTL's Inventor's Guide, [otl.stanford.edu/documents/OTLinventorsguide.pdf](http://otl.stanford.edu/documents/OTLinventorsguide.pdf), explains these general stages in further detail.

## 1. RESEARCH

Observations and experiments during research activities often lead to discoveries and inventions or the development of software and other copyrighted works. An invention is any useful process, machine, composition of matter (e.g., a chemical or biological compound), or any new or useful improvement of the same. Often, multiple researchers – including students, post-docs and research staff – contribute to an invention and may be inventors.

## 2. INVENTION AND TECHNOLOGY DISCLOSURE

This written notice of an invention to OTL begins the formal technology transfer process. The Invention and Technology Disclosure (also known as an invention disclosure) is a confidential document and should fully describe the new aspects of the invention, including the critical solution it provides and its advantages and benefits over current technologies. Invention disclosures can be submitted through OTL's Researcher Portal ([otldisclosure.stanford.edu](http://otldisclosure.stanford.edu)).

## 3. ASSESSMENT

The disclosure is assigned to a Licensing Associate who will review the invention disclosure and evaluate the invention's commercialization potential based on patent searches (if applicable), market analysis, existing competitive technologies and other factors. This assessment guides the licensing strategy.

If the inventors are contemplating starting a company around the technology, it is helpful to inform OTL about their plans during the assessment stage. The OTL Licensing Associate will take this into consideration when evaluating the technology and developing a strategy for intellectual property (IP) protection, marketing, and licensing.

#### 4. INTELLECTUAL PROPERTY PROTECTION

(if appropriate, necessary, or warranted)

Patent protection, a common legal protection method, begins with the filing of a patent application with the U.S. Patent and Trademark Office and, when appropriate, foreign patent offices. Once a patent application has been filed, it requires several years and tens of thousands of dollars to obtain an issued patent. Other common forms of IP protection include copyright and trademark. Unique biological materials and software can often be successfully licensed without formal IP protection. Additional information about copyright and software licensing can be found in OTL's publication "Creator's Guide to Commercializing Copyrighted Work" ([otl.stanford.edu/documents/OTLCopyrightGuide.pdf](http://otl.stanford.edu/documents/OTLCopyrightGuide.pdf).)

#### 5. MARKETING

Stanford is committed to broadly marketing all technologies to appropriate companies that could be interested in commercializing the particular invention. With the inventors' input, OTL creates a marketing overview of the technology; identifies candidate companies (potential licensees) that have the expertise, resources, and business networks to bring the technology to market; and contacts those companies to generate interest and gauge commercial potential.

**To ensure fair and open access to potential licensees, OTL markets all Stanford technologies, including those with start-up interest. Broad marketing helps the University find companies who may be interested in developing the technology and helps to mitigate and manage conflicts of interest if the technology is licensed to a start-up. The marketing period typically lasts 1-3 months before the Licensing Associate selects a licensee (if there is any commercial interest at all). Sometimes entrepreneurial inventors receive valuable industry feedback and begin to establish relationships with potential partners during this process.**

#### 6. SELECTING THE BEST LICENSEE(S)

Typically, there is only one party or none at all interested in licensing. If there are several parties interested in a license, OTL may grant non-exclusive or field-of-use licenses. If it is not possible to accommodate all interested parties, OTL will license the company most committed and able to bring the technology to the marketplace.

To choose the best licensee, OTL evaluates which company is in the best position to develop the technology and bring it to the marketplace. A well-established company typically has resources, business networks and product development experience but can lack commitment to the technology. A small company often has the singular focus and passion of a technology champion, the drive and "fire in the belly" to bring the technology forward and see that it succeeds – but insufficient experience or resources to make sure it can happen.

To assess the commitment of potential licensees, OTL asks companies for a development plan with details about how they intend to develop and market the technology. This plan should make the case that the company and its leadership are the best choice for commercializing the invention. It is important to note that inventors may not serve a management role in the start-up company unless they plan to leave Stanford (either permanently or on a leave of absence).

#### 7. LICENSING

OTL negotiates and executes a license or option agreement. This agreement is a contract between the University and a company in which certain University rights to a technology are granted to a company in return for financial and other benefits. Most start-ups request an exclusive license because they believe it is required to raise funding for the company. Typical terms for an exclusive license with a start-up company are described on page 20. They include equity, royalties, diligence milestones and an assignment fee.

When Stanford inventors are involved in a start-up company, licensing to that company can raise concerns about conflicts of commitment and interest. The University needs to maintain an arms-length relationship in all its business transactions (including license negotiations). The final license agreement must fall within the normal range of terms and conditions of similar licenses to non-inventor-associated companies (taking into consideration the unique circumstances of each technology and transaction). OTL cannot conclude any agreements until the appropriate conflict of interest reviews and approvals are completed. Additional information about negotiations and conflict issues can be found in the FAQs and Stanford Policies sections of this guide.

## 8. COMMERCIALIZATION

Most University inventions are very early stage and require further research and development efforts. The licensee typically makes significant business investments of time and funding to commercialize the product or service. These steps may entail regulatory approvals, sales and marketing, support, training, and other activities. The licensee will be expected to meet commercialization milestones described in the license.

It is fairly common for licensees, particularly early stage ventures, to evolve their strategy and development plans as the company grows, faces technical challenges, and recognizes new market opportunities. OTL can work with licensees to amend and renegotiate license agreements in response to these changes if the request and reasons to renegotiate are reasonable.

## 9. ROYALTIES

Royalties received by the University from licensees are distributed annually to inventors, departments, and schools according to Stanford policy. Royalties include both cash and equity received from licensees in consideration for granting the license. The inventors, including those who are involved in the start-up, will receive their share under Stanford policy outlined in the Research Policy Handbook ([stanford.io/rph](http://stanford.io/rph)).

## 10. REINVEST

Royalties and the proceeds from equity that are shared throughout the University collectively foster the creation of the next generation of research and innovation.

# Getting the Business to Take Off



**Launching a successful start-up company requires commitment, dedication, and perseverance. Many companies fail even if the core technology is innovative and promising. However, when the right technology is implemented at the right time, it has the potential to significantly benefit society. Components of a successful start-up include a compelling concept, a strong market opportunity, a competitive advantage, a sound business and financial plan, and an experienced management team. Luck and timing are also important.**

Entrepreneurs spearheading the new company formation will be the key champions for the technology and the start-up. In addition to navigating the standard technology transfer process, they are responsible for a variety of tasks such as identifying the market opportunity, developing a business plan, and pursuing financing. Every start-up follows its own unique path. But there are many common steps to get the business off the ground as outlined in this section. Additional Resources are available on pages 36-42 to help guide Stanford entrepreneurs through this process.

Often an important immediate question for Stanford inventors is whether they want to be involved in these tasks directly as part of the company team or to continue in their Stanford roles as faculty, research staff or students. School Deans and the Dean of Research can offer guidance about these decisions and information about options (e.g., taking a leave of absence). Also, faculty mentors often share their personal experiences with other inventors. There is additional information about Stanford's Best Practices for Start-ups on pages 28-34 of this booklet.

## NETWORK AND SEEK INPUT

Throughout the start-up process, advice and mentorship are invaluable in building the foundation for a successful business. Stanford cultivates a strong entrepreneurial spirit and has many resources to help with networking and provide guidance for a path to commercialization. Stanford's formal programs and entrepreneurship classes, combined with informal advice from advisors, friends, and colleagues, can help shepherd entrepreneurs through all facets of the start-up process – such as writing a business plan, building a management team, attracting board members, and meeting potential investors.

Entrepreneurs should be careful to separate their outside start-up activities from their Stanford responsibilities. For example, faculty are expected to use the time they are allowed for outside professional activities, typically 13 days a quarter (see the Research Policy Handbook at [stanford.io/rph](http://stanford.io/rph)), and students need to consult with advisors overseeing their academic progress.

### Stanford Entrepreneurship Network (SEN)

The Stanford Entrepreneurship Network (SEN) is a working group of university programs and student organizations offering opportunities for the Stanford community to learn and explore various aspects of entrepreneurship. Stanford entrepreneurs searching for advice, mentors and networking opportunities can start by joining this network. SEN serves as a single point of contact, bringing together about three dozen entrepreneurship-related campus programs under one umbrella organization. Information about additional SEN programs and resources is available at [sen.stanford.edu](http://sen.stanford.edu).

## DEVELOP A BUSINESS CASE

Entrepreneurs should develop a thoughtful business case to understand the market potential, competition, and funding needs. This should include a plan for developing the technology and attaining sufficient revenue to sustain and grow the company. This plan will be useful when meeting with investors and pursuing funding.

Several key factors should be considered when deciding to form a start-up company:

- **Technology innovation and patent/IP position** – Is broad patent coverage possible? Are there background patents owned by others? Will the company have freedom-to-operate to develop the product?
- **Development risk** – How far along is the technology? How much time and money is required to bring a product to market?
- **Development costs versus investment return** – Can investors obtain their required rates of return (e.g., 10X initial investment in 5 years)?
- **Product strategy** – Does the technology lend itself to opportunities for multiple products/platforms?
- **Market size, dynamics and potential** – Is the market big enough? Is it controlled by a few players? Is there a healthy growth trend?
- **Financial potential** – What market share can be obtained? Is it worth the effort?

A business plan should be clear and concise. It will be easier to “sell” the vision to investors and attract management talent with a formal business plan. Investors are interested in investing in start-ups with high growth potential. The business plan should address what investors want to know: the compelling concept, competitive advantage (including patent/IP position), market and financial potential, and proven management team. The business plan is generally a confidential document and should be carefully distributed.

Components of a typical business plan include:

- **Company name**
- **Mission statement** – A guiding vision for the company.
- **Current market situation** – How big is the market? What are its critical problems and shortcomings? How is the landscape changing? Who is the competition? Is it a consolidated or fragmented industry?
- **The company's solutions** – Which products or methods will be developed? How long will it take? What are its applications? What are the company's unique advantages and are those advantages sustainable? How will the current market change due to the company's products, methods, etc.?
- **Patent/IP landscape**

- **Marketing and sales strategy** – Pricing, Product, Placement. How will the target market know about the product? Which sales distribution channels will be used?
- **5-10 year strategic/financial plan:**
  - Financial projections – When will the company break even?
  - Key milestones required to meet financial projections.
  - Key metrics to be measured and tracked.
  - Key assumptions and how they change based on a competitor’s response.
  - Funding requirements.
- **Management team** – Members with resumes/CV and roles.
- **Timeline and key milestones**
- **Risk factors and mitigation measures**

The Resource Guide of this booklet contains a list of references that provide additional information about writing business plans.

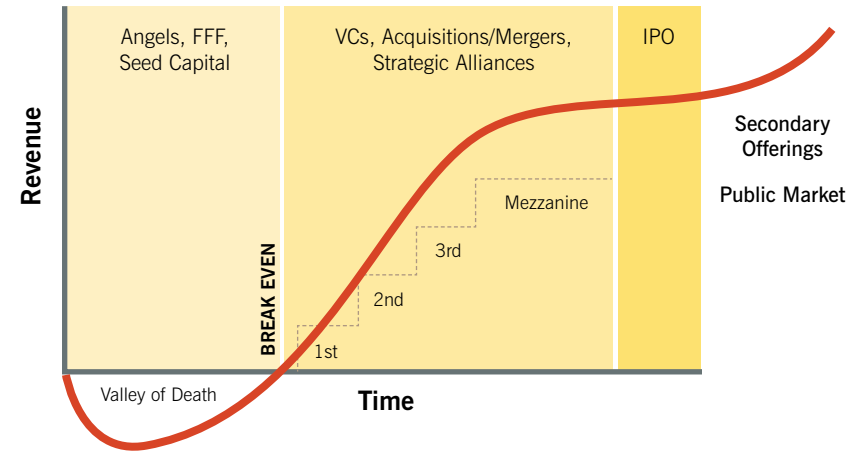
### PURSUE INVESTORS/FUNDING

Commercializing technology is typically a capital-intensive process, with the exception of some software companies. Entrepreneurs need to present their opportunity to people with the funds to help them make it happen. Typically these are venture capitalists, angel investors and – perhaps in the initial stages – friends and family. Using Stanford’s network is one way to start the personal introduction process that can help get the attention of angel and venture capital investors.

There is a rich history of start-up investing in Silicon Valley with a broad network of investors. The most common forms of technology start-up funding are angel investing and venture capital (VC). In the very early stages of start-ups, entrepreneurs raise funds on their own and through friends and family funds (FFF). However, technology commercialization often requires multiple rounds of funding from multiple sources.

Angels and venture capitalists (VC’s) are private investors who take on high risk ventures with goals of high returns. Return requirements vary based on industry and stage of funding, but many investors seek 10X their initial investment over 5 years.

### START-UP FINANCING CYCLE



This graphic is an example of a start-up financing cycle using traditional funding sources, through an initial public offering (IPO). There could be more or fewer rounds of funding. The 1st, 2nd, and 3rd rounds can be equivalent to Series A, B, and C. (Source: “Startup Company” Wikipedia, The Free Encyclopedia. Wikimedia Foundation, Inc. 11 March 2009. Web. June 2012 < en.wikipedia.org/wiki/File:Startup\_financing\_cycle.svg>)

### Angel Investing

Angel investors are typically high-net-worth individuals who have a personal interest in funding new companies. They are often willing to invest in earlier stages and with smaller amounts of money than VC’s in exchange for equity. They can take passive or active roles in the start-up and typically have a longer investment horizon than VC’s. According to the Center for Venture Research at the University of New Hampshire (paulcollege.unh.edu/cvr), total angel investments in 2014 were \$24.1 billion to a total of 73,400 entrepreneurial ventures.

### Venture Capital

Compared to angels, venture capitalists can invest larger amounts of money (usually millions of dollars) in a company. In exchange they tend to receive more equity. VC’s also exercise control and bring experienced management talent to help guide and grow the company. Sometimes they invest in several rounds of funding and are part of a larger consortium of investors in the company. According to PriceWaterhouseCoopers (www.pwcmoneytree.com), the U.S. total of VC investments in 2014 was \$48.3 billion from 4,356 deals, with \$23.3 billion and 1,409 deals in the Silicon Valley alone.



## Non-traditional Funding

Start-ups may also investigate and pursue funding from non-traditional sources. Some examples of these are:

- **Government grants** – Certain research grants are available through programs such as SBIR/STTR (Small Business Innovation Research and Small Business Technology Transfer – [www.sbir.gov/](http://www.sbir.gov/)) or the Department of Energy (<https://arpa-e-foa.energy.gov/>).
- **Banks** – Banks do not usually participate in equity investments in new companies, but they are a source of loans, particularly for capital purchases when there is some kind of collateral (such as large equipment).
- **Crowdfunding** – Various crowdfunding companies enable entrepreneurial fundraising by pooling small investments from a network of individuals.

## HOW INVESTORS EVALUATE A COMPANY

Investors listen to pitches constantly and only a small portion of start-ups get funding. The investors will determine if the start-up meets their strategic and financial goals and if the company fits into their current portfolio of investments. VC funds are targeting at least an overall 20% annual return on the fund which is significantly higher than other investment vehicles such as stocks and bonds.

Investors typically perform due diligence before funding new opportunities, and they often view the fact that a new company is working with Stanford positively in this analysis. For example, OTL's involvement may provide an extra measure of reassurance to investors that IP rights are being properly secured by the company. (Bear in mind, however, that OTL will carefully evaluate the patentability and commercial potential of an invention before embarking on the costly and lengthy process of obtaining patent protection.)

Funders and Founders offers an infographic explanation of “How Startup Valuation Works - Measuring a Company's Potential” ([fundersandfounders.com/how-startup-valuation-works](http://fundersandfounders.com/how-startup-valuation-works)).

## EXIT STRATEGY

Investors plan to recoup their investments via exit strategies. Typically, a VC hopes to sell its equity in a portfolio company within 3-7 years, ideally through an initial public offering (IPO). Another exit strategy could be through mergers and acquisitions (M&A) instead of an IPO.

## PITFALLS

New company formation is a high risk proposition. While many Stanford start-ups are successful, others are not. Some common problems that can cause academic start-ups to fail are:

- **Inexperienced management** – A strong, experienced, cohesive team is required for a successful start-up company. Problems can arise if founders or other members of the team do not have enough start-up and business experience or if founders, new management, and investors do not have the same strategic vision.
- **Lack of funding** – A start-up needs sufficient capital to overcome technical challenges, reach critical business milestones, and progress to the next phase of development. To attract investors the company must have a solid business plan and a strong management team.
- **Technology does not meet commercial need** – Sometimes the science is innovative and exciting but does not correlate to a critical commercial need, or current solutions are still better than the new technology.
- **Timing** – Even when a commercial need exists, the company may miss the market. Sometimes this is because the market is not ready for a product, e.g., too early, still too expensive, unrecognized need. Sometimes it is because the product is too late to the market and the need has already been filled by a different technology or competitors have leapfrogged over the company with an even better product.
- **Marginal niche** – If the target market is smaller than expected the company may not meet its financial targets.
- **Bad luck** – Sometimes events outside of the entrepreneur's control can negatively impact a company. But even failure is often seen as one of Silicon Valley's greatest strengths.

Additional information about why start-ups fail can be found at [www.inc.com/geoffrey-james/the-7-real-reasons-startups-fail-and-what-to-do-instead.html](http://www.inc.com/geoffrey-james/the-7-real-reasons-startups-fail-and-what-to-do-instead.html).

# Frequently Asked Questions

## HOW ARE ENTREPRENEURIAL INVENTORS INVOLVED IN THE LICENSING PROCESS?

In most ways, an entrepreneurial inventor's involvement in the licensing process is similar to that of any other inventor. However, OTL's relationship with inventors becomes more complex when inventors want to start a company, particularly with regard to negotiations.

OTL's track record of success would not be possible without the ingenuity of Stanford inventors. The licensing process starts when they disclose their new ideas and continues as they collaborate with us throughout the life cycle of the technology. OTL carefully considers inventor feedback and strives to keep them informed along the way. OTL encourages inventors to recommend leads on potential licensees, to provide input for assessing technical and market feasibility, and to offer suggestions on which licensing strategy would be best to commercialize the technology.

However, in the case of an inventor start-up, the inventors do not participate in OTL's actual negotiation of license agreements with potential licensees. This approach is based on the principle that Stanford faculty/employees cannot represent the company and the university at the same time. Therefore, the inventor's role should not include representing the potential licensee or negotiating directly with OTL. In addition, if an inventor has a potential conflict of interest (COI), he or she will need to participate in a COI review (described on pages 25-27).

## DOES OTL GIVE ANY SPECIAL CONSIDERATION TO INVENTOR START-UPS WHEN SELECTING A LICENSEE?

Stanford cannot offer inventors preferential treatment even though inventor start-ups are often in the best position to bring the technology to commercial fruition because of the inventor's passion and expertise. An entrepreneurial inventor can always have, at a minimum, a non-exclusive license to the

invention without marketing. Even after marketing (see pages 6 and 7), inventor start-ups have almost always been chosen as the most appropriate licensee and have received an exclusive license when requested. This is because the start-up usually has a deep understanding of the technology and the passionate commitment required to develop it.

The University is obligated to maintain an arms-length relationship in all business transactions. Therefore, license negotiations and agreements with inventor start-ups must fall within the normal range of terms and conditions of similar licenses to non-inventor-associated companies. Since University royalties often become the main source of financial return for inventions, a fairly-negotiated deal benefits inventors over the long run.

## HOW MUCH CAN I TELL POTENTIAL INVESTORS ABOUT THE INVENTION?

First and foremost, research at Stanford must comply with Stanford's Openness in Research Policy (see the Research Policy Handbook— stanford.io/rph). In particular, research results – the underlying data, the processes, and final results of research – must not be secret and must also be accessible by all interested persons. For the purposes of investment discussions that occur prior to public dissemination of their work under Stanford's research policies, entrepreneurs will need to describe the general aspects of the invention to potential investors in order to generate any interest. Information can be shared with investors, but entrepreneurs are not permitted to delay disclosure of their research results by postponing presentations or slowing down the process of manuscript submissions.

Some entrepreneurs are more comfortable sharing details of an invention after a patent application is filed. A patent filing allows the inventors to claim and prove a filing date for their ideas as described in the application, which can be useful. However, a patent application does not provide the rights of an issued patent to prevent others from practicing the invention.

Understanding that delays must be avoided, if an inventor or entrepreneur wants to discuss the details of a technology while the work is being prepared for publication and prior to filing a patent application or other IP protection, a Non-Disclosure Agreement (NDA) is often used to facilitate open discussions

and to prevent the loss of patent rights from inadvertent disclosure. OTL can provide NDAs for companies that are evaluating the technology for potential licensing. The start-up management or its legal counsel typically handles NDAs for discussions of the technology on behalf of the company (e.g., with potential investors or corporate partners). Keep in mind that many VC's and strategic corporate investors do not sign NDAs because they fear it would constrain their existing portfolio technologies or future opportunities.

Sample NDA agreements are available on OTL's website ([stanford.io/otl\\_sampleagr](http://stanford.io/otl_sampleagr)).

### **WHEN CAN THE START-UP MANAGEMENT NEGOTIATE A LICENSE?**

After broadly marketing the invention, if the start-up is the best choice for commercializing the technology, OTL will negotiate with a representative of the company to grant a license to the new company. Stanford markets its inventions because it is committed to looking for the best licensees to transfer technology from Stanford to the marketplace for the public benefit. Also, under the Bayh-Dole Act, the University has an implicit obligation to ensure that inventions funded by the Federal government are effectively commercialized. Under Stanford policy, faculty, staff and students cannot represent the company in negotiations due to conflicts of interest.

### **WHICH COMES FIRST, THE LICENSE AGREEMENT OR THE FUNDING AGREEMENT?**

This is a chicken and egg scenario. Investors usually want to be sure the entrepreneur has an option or license to the technology before investing in the company but the entrepreneur often does not know what kind of license (field of use, financials, etc.) the investor requires. One solution is for an entrepreneur to take an option to a license, with the terms of the license to be negotiated later. The negotiations for an option/license and investment funding agreement will often occur in parallel.

### **WHAT IS AN OPTION AND CAN A START-UP TAKE THAT INSTEAD OF A FULL LICENSE?**

An option agreement is often used to reserve rights in an invention while a company evaluates the technology, explores funding opportunities and raises the capital needed to fully license the rights in question. Option agreements include financial consideration to Stanford in order to reserve those rights. Start-up companies sometimes prefer this route and OTL may grant options for any time period up to one year in duration, most often in 6-month increments.

When a technology is either optioned or licensed to an inventor's start-up company, the inventors are required to stop initiating new work on that technology at Stanford (that is, using University resources). Subject to conflict of interest (COI) review, the final separation between a company and Stanford is determined on a case-by-case basis, but it must be completed within 12 months. It is important that inventors plan accordingly and begin to wind down Stanford activities before either the licensing or optioning takes place.

### **HOW LONG DOES IT TAKE TO LICENSE TECHNOLOGY FROM OTL?**

The time it takes to license an invention varies. After the technology is disclosed to OTL it could take several weeks to a few months to review the invention and then apply for a patent application (if OTL feels filing an application is appropriate). OTL will also need about 1-3 months to market the invention to other potential licensees and assess licensing interest from the broader community. If other companies express interest, the marketing period may be longer.

During this time, the entrepreneur(s) could begin to develop other aspects of the new venture to better position the start-up as a potential licensee (e.g., develop a business plan, research entrepreneur resources, begin seeking investors) but there is no guarantee that the new venture will get the exact license they want. If OTL decides that the start-up company is the best possible licensee, negotiations with OTL for a license could take several weeks to many months. However, some negotiations may only take a few days if both parties can agree to terms easily. Information about streamlining these negotiations can be found at [stanford.io/otl\\_streamline](http://stanford.io/otl_streamline).

In addition, licensing to start-up companies usually presents conflict of commitment (COC) and conflict of interest (COI) issues that must be disclosed by inventors and managed by the University (see the Research Policy Handbook— [stanford.io/rph](http://stanford.io/rph)). Conflict of commitment and interest policies are determined by the Faculty Senate. The School Deans, the Dean of Research and the Provost have responsibility for their implementation. If faculty, staff or students propose to have a management role in the start-up company, approvals for leaves of absence must be obtained. OTL cannot conclude any agreements until the appropriate COC and COI reviews and approvals have been completed. This review can take place in parallel to license negotiations. It can begin once the basic parameters of the license are decided and the faculty member submits the required ad hoc COI disclosure to the appropriate Deans. More information about COC and COI can be found on pages 25–27.

### WHAT ARE TYPICAL LICENSING TERMS FOR STANFORD'S AGREEMENTS WITH START-UP COMPANIES?

License agreements have both financial and non-financial terms. These vary based on the particular set of facts for each agreement – for example, the stage of development, the field of use, and the commercialization risks are all taken into consideration. Typical terms consist of:

- Negotiated financial terms including issue and annual fees, payments when technical milestones are achieved, royalties on product sales, and an

assignment fee. Exclusive licensees are generally expected to pay patent expenses. Financial terms may also include a small, minority share of equity in the company.

- Field of use restrictions, since a start-up company often does not have the resources to develop all the applications of an invention.
- Diligence terms to ensure reasonable progress in the growing the company and commercializing the invention.

Many entrepreneurs are concerned that the financial terms are overly onerous and unreasonable. OTL has completed hundreds of agreements with start-ups and understands the constraints they have. OTL's goal is to negotiate an agreement that is fair and reasonable based on our experience, on the industry and on how the Stanford technology fits into the ultimate product. Because the University needs to maintain an arms-length relationship in all its business transactions, license negotiations and the final license agreement for Stanford-associated companies must fall within the normal range of terms and conditions of similar licenses to any other company (taking into consideration the unique circumstances of each technology and transaction).

There are several documents on OTL's website that provide further information about valuations and provisions found in standard license agreements:

- How OTL Thinks about the Value of a License – [stanford.io/otl\\_value](http://stanford.io/otl_value)
- Sample Option Agreement and Sample Exclusive License that includes equity - [stanford.io/otl\\_sampleagr](http://stanford.io/otl_sampleagr)

### DOES THE UNIVERSITY TAKE EQUITY IN START-UPS?

Stanford often accepts equity (typically no more than 5% ownership) as part of the financial terms of the license. Because most start-up companies have limited cash, equity is often substituted for some of the cash consideration. Equity is also a way for the University to share some of the risk associated with the start-ups. A decision to take equity must make sense for both the University and the company.



In addition, when OTL enters into an exclusive license agreement with a privately-held company (such as a start-up), the standard contract allows Stanford to participate as a co-investor to purchase additional equity in the company's private financing rounds prior to initial public offering (IPO). The Chief Financial Officer of the University decides whether to invest based on established criteria and is independent of OTL. As a co-investor, Stanford does not negotiate the terms of future private investments; it takes the same terms that the lead investor negotiates.

### **HOW DOES OTL MANAGE THE EQUITY GRANTED AS PART OF A LICENSE AGREEMENT?**

The distribution of equity differs slightly from distribution of cash royalties. After 15% is deducted for OTL's administrative fee, inventors ordinarily receive their proportional share (1/3) of equity directly from the licensee. The remainder is earmarked to split between the OTL Research and Fellowship Fund (administered by the Vice Provost and Dean of Research) and the Vice Provost for Graduate Education/OTL Graduate Education Fund (administered by the Vice Provost for Graduate Education).

The University share is managed by the Stanford Management Company which generally liquidates equity as soon as a public market exists. If Stanford holds equity in a company that conducts a clinical trial at Stanford on Stanford-owned IP, the University will generally sequester the equity and earned royalties for institutional conflict of interest reasons.

### **DOES STANFORD TAKE A SEAT ON THE COMPANY BOARD?**

No, nor does Stanford take an active role in managing the company.

### **WILL STANFORD ASSIGN THE PATENT TO A START-UP (OR EXISTING COMPANY)?**

No, Stanford does not assign or transfer IP rights. When appropriate, Stanford can grant an exclusive license after marketing and deciding that the start-up is the best candidate to commercialize the invention.

### **WHAT HAPPENS IF THERE ARE FOLLOW-ON PATENTS TO THE ORIGINAL PATENT?**

It depends on who owns the follow-on patents. Typically, Stanford will have filed the initial patent application that is exclusively licensed; the exclusive licensee provides input for the prosecution of this original patent. Follow-on inventions conceived by the licensee without Stanford involvement usually belong to the licensee. These patents must be filed by a different law firm than the original patent (to avoid the conflict of interest caused by the attorney representing both Stanford and the licensee). Follow-on inventions based on work at Stanford will be owned by Stanford and the licensing of the new invention will be handled by OTL as if it were a new disclosure. In other words, the existing licensee will not be automatically granted a license to the follow-on invention.

### **CAN A START-UP GET A LICENSE WITHOUT BEING INCORPORATED?**

The company is not required to be officially incorporated. But, it should have a name and place of business. OTL must sign an agreement with an entity, not individual inventors. Stanford employees may not sign an agreement on behalf of the company nor have positions/titles at the company that imply a management role.

### **IF THE START-UP IS BASED ON AN INVENTION JOINTLY OWNED BY STANFORD AND ANOTHER INSTITUTION, WHAT HAPPENS TO THE INVENTION?**

Typically, OTL enters into an Inter-Institutional Agreement whereby one of the institutions will take the lead. This way a company can negotiate a single agreement with an exclusive license to both parties' IP rights.

### **IF A START-UP NEEDS TECHNOLOGY FROM ANOTHER INSTITUTION BESIDES STANFORD, BUT THE TECHNOLOGY IS NOT JOINTLY-OWNED WITH STANFORD, WILL THE COMPANY NEED A SEPARATE LICENSE?**

Under most circumstances the company will need to negotiate separately with the other institution for a license. However, schools do sometimes package their technologies together in a single license agreement. For complicated technologies, the company will need to conduct a freedom to operate (FTO) analysis and confirm that the company has a path to acquire all the necessary IP components the start-up will need to make its proposed products.

### IF THE INVENTION IS UNPATENTED SOFTWARE, WILL THE START-UP STILL NEED A LICENSE?

Yes, a copyright license is required if the software falls under Stanford's ownership policy (see the Research Policy Handbook— [stanford.io/rph](http://stanford.io/rph)).

### CAN I CONTINUE TO DO RESEARCH AT STANFORD ON THE TECHNOLOGY THAT IS THE BASIS OF A START-UP?

Stanford always reserves the right to practice its own inventions for research purposes. However, researchers are not permitted to continue to develop technology at Stanford for the benefit of a start-up in which the researcher has a financial interest. See the next section (Stanford Policies and Conflict of Interest) for further details.

## Stanford Policies, Conflict of Interest, and Conflict of Commitment

### INTELLECTUAL PROPERTY POLICY AND OWNERSHIP

Stanford's intellectual property (IP) policies are outlined in the Research Policy Handbook ([stanford.io/rph](http://stanford.io/rph)). For new companies started by Stanford faculty, staff, or students with technology created at Stanford and falling under Stanford policy, ownership of IP rights will be with the University. This ownership policy applies to any sort of intellectual property, including patents, copyrights on software, semiconductor maskworks, trademarks and tangible research property.

### MANAGING CONFLICT OF INTEREST AT STANFORD

OTL works with Stanford inventors both to facilitate technology transfer and to manage the licensing process. In the case of Stanford-affiliated start-ups, this process often raises issues regarding conflicts of interest (COI). A full explanation of Stanford's policies and procedures for managing COI can be found at [stanford.io/coi](http://stanford.io/coi).

OTL must be particularly sensitive to public perception when a potential licensee is a Stanford-affiliated start-up or a faculty-associated company. Marketing inventions and negotiating from an arms-length relationship are two ways that OTL manages potential COI (see Best Practices of Faculty and Student Start-ups on pages 28–34).

In addition, ad hoc disclosures are required whenever a current or prospective relationship creates the potential for COI (e.g., when there are additional financial relationships proposed between a faculty member and a prospective licensee or research sponsor). A COI occurs when there is a divergence between an individual's private interests and his or her professional obligations to the University such that an independent observer



might reasonably question whether the individual's professional actions or decisions are determined by personal financial considerations. A COI depends on the situation and not on the character or actions of the individual.

A resource page for COI is available at [stanford.io/coi](http://stanford.io/coi). COI reviewers are concerned with whether or not a researcher/faculty member can separate University research from company research, provide unbiased and appropriate guidance and support to students, maintain academic integrity in research and education, and adhere to government mandated policies. OTL cannot conclude any agreements until the appropriate COI reviews and approvals have been completed.

### **CONFLICT OF COMMITMENT**

Stanford faculty members owe their primary professional allegiance to the University. Their primary commitment of time and intellectual energies should be to the education, research, and scholarship programs of the institution.

Conflicts of commitment usually involve issues of time allocation. If a situation raising questions of conflict of commitment arises, faculty should discuss the situation with their department chair or school dean, or the Dean of Research. More information about University policies concerning conflicts of interest and commitment can be found at [stanford.io/coi](http://stanford.io/coi) and in the Best Practices sections of this guide.

### **CONSULTING AND OWNERSHIP OF INTELLECTUAL PROPERTY**

Start-up companies may hire Stanford inventors as consultants. Since the University does not ordinarily review consulting arrangements, inventors should be clear about the delineation between University work and private consulting. Stanford inventors cannot enter into any agreement that creates copyright or patent obligations that conflict with their SU-18 agreement to assign their rights to Stanford. Faculty members must separate and clearly distinguish ongoing University research from work being conducted at the company as outlined in the Best Practices for Faculty Start-ups in this guide.

Stanford will ordinarily presume that intellectual property developed 1) while a faculty is consulting at the company; and 2) on an on-going company program (e.g., drug development, medical device, chip development, software issue, or any other specific company research or design activity) belongs to the company as long as there has not been more than incidental use of Stanford resources. Stanford resources are considered to include facilities, equipment, or the time and expertise of students and post-doctoral fellows and research staff. However, Stanford resources do not include use of personal computers, telephones, or libraries.

When a faculty member is consulting for a start-up company with which he or she has another financial relationship, it is particularly important to make certain that the separation between consulting activities and the faculty member's academic program, including research and teaching activities, is clear to all parties. These policies also apply during sabbatical leave. Information on requirements for faculty consulting activities can be found at [stanford.io/rph\\_fac\\_consult](http://stanford.io/rph_fac_consult). When a question arises as to the appropriate delineation between a researcher's University responsibilities and a researcher's consulting obligation, the researcher should discuss the situation with his or her cognizant dean. If there is a question of IP ownership, the IP should be disclosed to the University.

### **OBLIGATION TO SPONSORS**

Inventors should take particular care in disclosing all sponsors, including companies whose funding or materials led to the invention. Sponsored research agreements specify what rights a sponsor has in any IP developed as a result of the sponsored research. Under most circumstances, Federal funding of research leading to an invention will not impose significant impediments on commercializing the invention via a start-up. Funding or materials provided by other entities (such as companies) may result in license rights to those entities, limiting the license rights available for a start-up. Corporate sponsors are typically granted rights to negotiate a license for any IP arising from sponsored research, but sponsorship agreements vary widely. The Licensing Associate responsible for the invention reviews the research agreements listed on the invention disclosure to identify any licensing restrictions on the invention.

# For Faculty: Best Practices for Start-ups



**Faculty-associated start-up companies (“Start-ups”)<sup>1</sup> are both opportunities and challenges for Stanford. Stanford has had a long history of entrepreneurial activity by faculty, staff, students and alumni and the University is, in general, supportive of its entrepreneurs.**

On the other hand, Stanford is an institution of public trust, with education and research as its mission, and a requirement to maintain openness in research. Therefore, entrepreneurial activity must be balanced by careful review of the proposed relationships, which may or may not be allowed. These relationships may require active management to assure openness in research, academic freedom for trainees, and clear understanding about how conflicts of interest are to be managed.

Stanford is committed to avoiding either perceived or actual conflict of interest issues with respect to faculty Start-ups. Both Stanford and its faculty members have responsibilities to optimize technology transfer and mitigate COI when licensing Stanford IP to a Start-up is considered.

## UNIVERSITY/OTL RESPONSIBILITIES

OTL makes licensing decisions based on its professional judgment about technology transfer to achieve the best possible benefit to the public, without undue influence from internal or external parties.

OTL takes several steps to effectively transfer the technology while managing conflict of interest. First, OTL markets all Stanford technology to ensure fair and open access to potential licensees – faculty Start-ups should not receive or be perceived as receiving preferential treatment. Second, Stanford faculty/employees are not allowed to represent the potential licensee and must not negotiate directly with OTL. Third, OTL licensing agreements may be exclusive or non-exclusive depending on what is most suitable for a given technology. Finally, the faculty member’s School Dean and the Dean of Research must review any actions that present a potential conflict of interest, specifically:

- If, after thorough marketing, OTL determines that a faculty-affiliated company is the appropriate licensee, then it documents its marketing results and summarizes the rationale for its licensing decision for the Deans.
- The faculty member must disclose any interest (consulting fees and/or stock options) in the Start-up to the Deans.
- The faculty member must agree to separate University responsibilities from company responsibilities according to the criteria listed under Faculty Responsibilities.
- OTL may proceed with licensing only if the conflict is deemed manageable by the Deans (based on the faculty member’s plan for separating responsibilities).

## FACULTY RESPONSIBILITIES

Faculty members are responsible for separating University duties for research and education from personal financial interests in the company.

### Faculty must

- Separate and clearly distinguish on-going University research from work being conducted at the company.
- Limit consulting for the company to a maximum of 13 days a quarter, per University policy.
- Serve only in advisory or consultative roles at the company [as opposed to managerial roles or titles (e.g., CTO) suggesting management responsibility].
- Take a leave of absence if engaging in a management role.

<sup>1</sup> Faculty-Associated Start-up is defined as a company where the original intellectual property originates with the faculty, where the faculty is a founder and has a significant equity position in the company, and often has an influential role in determining the direction of the company.



### Faculty must not

- Negotiate with the University on behalf of the company.
- Receive gifts or sponsored research from the company.
- Involve research staff or other University staff in activities at the company. Company personnel cannot be affiliated with the University.
- Involve company personnel in Stanford research.
- Involve current students in company activities. If a student asks to take a leave of absence to participate in the company, the student should be referred to the School Dean who will review the request and offer independent advice.
- Involve junior faculty that they supervise in company activities. Even if the faculty member does not have a supervisory role, he or she should avoid situations in which junior faculty might feel expected to be involved in the company.
- Use University facilities for company purposes.
- Undertake human subjects research at the University as PI/protocol director.
- Supervise faculty who are PI/protocol directors for human subjects research related to the company.

**'Pipelining'.** Many times, the faculty member wishes to continue to do research at Stanford in the area of interest to their Start-up. Stanford is particularly concerned that University resources will be used to benefit the company, especially new companies that do not have their own facilities or many employees (i.e., the "virtual" company). Stanford should not be the research or development arm of a Start-up. If a new follow-on or improvement invention is developed after the original dominating technology has been licensed to the Start-up, OTL will still market it to all potentially interested parties. Exclusive licenses will not always be granted to the Start-up, even if there is no other interest. In cases where the original technology dominates the subsequent developments, sometimes a nonexclusive license will suffice. If, in the interest of effective technology transfer, it is reasonable to grant an exclusive license to the follow-on technology, the exclusivity may be mitigated by a shorter term of exclusivity, limited field of use, increased diligence, etc. Any new license is subject to conflict of interest review and approval.

### OPTION AND LICENSE AGREEMENTS TO FACULTY START-UPS

Faculty inventors are expected to wind down ongoing research in the particular area that is going to be commercialized by the faculty inventor's Start-up. COI offices will also review this wind-down with inventors, and it will become part of the record.

An option agreement is often used to reserve rights in a technology so that the company can begin exploring funding opportunities in order to actually acquire the rights in question. A start-up company sometimes prefers to take an option to a license, rather than an outright license itself. OTL may grant options for any time period up to one year in duration, most often in 6-month increments. Inventors are required to stop initiating new work on the technology at Stanford (that is, using University resources) when the technology is either licensed to a company or has been optioned to a company. Subject to conflict of interest review, the final separation between a company and Stanford may take up to 12 months, the period to be determined on a case-by-case basis. Since it may take several months to wind down ongoing research, it is important that inventors plan accordingly and begin the wind-down of the Stanford activities before either the licensing or optioning takes place.

It's important for inventors to understand that this policy covering options and licenses is intended to enable inventors to succeed in translating their technologies into use without jeopardizing the mission or funding status of Stanford University. Stanford has a rich history of translating inventions, and these practices are designed to build on that strong base.

# For Students: Best Practices for Start-ups



**Innovation and the translation of inventions into products that serve the public are deeply ingrained in Stanford's culture and we have benefited greatly from it. Stanford is supportive of faculty and students becoming inventors and starting companies – whether or not these companies are based on Stanford technology. In addition, Stanford is committed to avoiding either perceived or actual conflict of interest issues with respect to start-ups. When licensing Stanford intellectual property to a start-up, both Stanford and its entrepreneurs have responsibilities to optimize technology transfer and mitigate conflict of interest (COI).**

OTL makes licensing decisions based on its professional judgment about how to achieve the best possible benefit to the public, without inappropriate influence from internal or external parties.

To effectively transfer the technology in an unbiased way:

- OTL markets all Stanford technology to ensure fair and open access to potential licensees.
- Start-ups should not receive or be perceived as receiving preferential treatment.
- Student inventors (or faculty) involved in a start-up may not negotiate with the University on behalf of the company unless they are on leave from Stanford.

- If, after thorough marketing, OTL determines that an inventor-affiliated company is the appropriate licensee, OTL documents its marketing efforts and summarizes the rationale for its licensing decision.
- If the inventor is at Stanford, the inventor's School Dean and the Dean of Research will review any actions that present a potential conflict of interest.
- The inventor must disclose any financial interest (consulting fees and/or stock options) in the start-up to the Deans.
- Student inventors must describe
  - 1) how they will separate and clearly distinguish their on-going activities as students (e.g., thesis research) from work being conducted at the company; and
  - 2) measures that will allow them to avoid all use of Stanford facilities and personnel for company purposes (e.g., availability of off-campus office or R&D space and support personnel). Ideally, the separation between Stanford and the company will occur contemporaneously to any formal option or license agreement. However, in some cases, a transition period of up to 1 year might be acceptable.
- The School Dean and Dean of Research must also review and approve any conflict of interest under policies that apply to faculty if Stanford faculty are involved with and have a financial interest in the start-up company.
- OTL may proceed with the licensing only if all conflicts are deemed manageable by the cognizant Dean and the Dean of Research. OTL options and licensing agreements may be exclusive or non-exclusive depending on what is most suitable for achieving technology transfer and the best possible benefit to the public.

## OPTIONS AND LICENSES

An option agreement is often used to reserve rights in a technology so that the company can begin exploring funding opportunities in order to actually acquire the rights in question. A start-up company sometimes prefers to take an option to a license, rather than an outright license itself. OTL may grant options for any time period up to one year in duration, most often in 6-month increments. Inventors are required to stop initiating new work on the technology at Stanford (that is, using University resources) when the technology is either licensed to a company or has been optioned to a company. Subject to conflict of interest review, the final separation between

a company and Stanford may take up to 12 months, the period to be determined on a case-by-case basis. Since it may take several months to wind down ongoing research, it is important that inventors plan accordingly and begin the wind-down of the Stanford activities before either the licensing or optioning takes place.

It's important for inventors to understand that this policy covering options and licenses is intended to enable inventors to succeed in translating their technologies into use without jeopardizing the mission or funding status of Stanford University. Stanford has a rich history of translating inventions, and these practices are designed to build on that strong base.



## OTL and Entrepreneurs



**Stanford's approach to educating entrepreneurs is to provide an environment that encourages networking and collaboration across disciplines and industries; to offer opportunities for testing ideas; to be open and welcoming to new and experienced entrepreneurs and investors; and to maintain transparency regarding University policies. OTL is one small part of Stanford's entrepreneurial culture, with over 250 companies started around technology licensed through the office.**

One of OTL's goals is to find a company that is the best fit for an invention so that it can be commercialized for society's use and benefit. At Stanford we are fortunate that the best fit often involves an entrepreneur with the passion and commitment to realize the potential of the technology. We are excited to work with those entrepreneurs and negotiate an agreement that can help build the foundation for both a successful company and a mutually beneficial long term relationship between the company and OTL.

## RESOURCE GUIDE

**Stanford has a wealth of entrepreneurial history and knowledge. Some entrepreneurs are already aware of the various organizations, classes and websites that are available to them. Below is a list of resources, both on- and off-campus, that can educate and guide Stanford entrepreneurs through the start-up process or help them network and gain feedback for their new company.**

### ORGANIZATIONS AND PROGRAMS AT STANFORD

#### **Association of Industry-Minded Stanford Professionals (AIMS)**

AIMS is the postdoc link to entrepreneurship and industry. Their main goal is to create a fertile networking environment for entrepreneurially minded postdocs and ease the transition between academia and industry  
[aims.stanford.edu](http://aims.stanford.edu)

#### **Business Association of Stanford Entrepreneurial Students (BASES)**

BASES is a nonprofit, student-run organization that has grown from five founding engineering students in 1996 to more than 5,000 members, including undergraduates, graduate students and faculty from all seven schools at Stanford. It is a community that encourages learning, fosters innovation and inspires the next generation of entrepreneurial leaders. BASES sponsors annual business plan competitions, the E-Challenge and Social E-Challenge. During these competitions, industry experts, venture capitalists and lawyers judge and coach students on their ideas, plans and presentation skills. BASES also organizes workshops and other programs that assist students in finding employment and developing business plans. It has funding relationships with several leading venture capital firms.  
[bases.stanford.edu](http://bases.stanford.edu)

#### **Innovation Farm Teams (iFarm Teams)**

The iFarm Team program, begun by OTL in 2011, is an experimental initiative that aims to accelerate the commercialization of new Stanford-invented technologies while providing a unique educational experience to iFarm Team participants. Each iFarm Team consists of current Stanford community members (students, postdocs, faculty, alumni), relevant industry experts, and an OTL Licensing Associate. iFarm Team activities may include conducting analysis using design thinking, business model generation, opportunity assessment, market research and technical development such as prototyping.

#### **SPARK**

SPARK is a partnership between Stanford University School of Medicine and volunteers from biotech, pharma, and healthcare investment. SPARK is working to make translational medicine a reality by promoting innovative research; educating students in technology, drug discovery and drug development; creating partnerships between scientists and entrepreneurs; and bridging basic science and pre-clinical studies with expertise in clinical testing and product development. SPARK provides funding, education, access to facilities, expert advice, and mentorship to researchers whose projects show promise as future medical therapies.  
<http://med.stanford.edu/sparkmed>

#### **Stanford Angels & Entrepreneurs (SA&E)**

SA&E seeks to strengthen Stanford's entrepreneurial community by fostering relationships among potential investors and entrepreneurs. Beyond funding start-ups, SA&E supports both angels and entrepreneurs through educational programs and access to the Stanford entrepreneurial ecosystem.  
[stanfordaande.com](http://stanfordaande.com)

#### **Stanford Byers Center for Biodesign**

Stanford Biodesign trains students, fellows and faculty in the biodesign innovation process: a systematic approach to needs finding and the invention and implementation of new health technologies. Stanford Biodesign administers seed funding from several sources for medical device, diagnostic and healthcare IT projects and provides mentoring and networking with relevant experts in the health technology, venture and legal industries.  
[biodesign.stanford.edu](http://biodesign.stanford.edu)

### **Stanford Entrepreneurship Network (SEN)**

SEN is a federation of three dozen entrepreneurship-related campus organizations that conduct research, teach courses and provide outreach services. Stanford-affiliated groups may join SEN by contacting its administrator through its website.

[sen.stanford.edu](http://sen.stanford.edu)

### **Stanford Ignite**

Stanford Ignite is a certificate program offered on the Stanford campus and in cities around the world. It teaches innovators to formulate, develop and commercialize their ideas. It combines current graduate students and entrepreneurs with innovators, scientists and engineers from leading companies. Ignite is taught by Stanford GSB faculty who expose participants to both the fundamentals of business, and the practical aspects of identifying and evaluating business ideas and moving them forward.

<http://www.gsb.stanford.edu/programs/stanford-ignite>

### **Stanford Predictives and Diagnostics Accelerator (SPADA)**

SPADA assists interdisciplinary innovators in research, development and deployment of technologies that improve human health through disease prediction and/or diagnosis.

[spectrum.stanford.edu/accordions/spada](http://spectrum.stanford.edu/accordions/spada)

### **Stanford Technology Ventures Program (STVP)**

As the entrepreneurship center in Stanford's School of Engineering, STVP delivers courses and extracurricular programs to Stanford students, creates scholarly research on high-impact technology ventures, and produces a large and growing collection of online content and experiences for people around the world. STVP is not a startup incubator or accelerator. It focuses on empowering students at Stanford and learners everywhere with the knowledge, skills and attitudes necessary to be entrepreneurial in career and life.

[stvp.stanford.edu](http://stvp.stanford.edu)

### **Stanford Venture Studio @ the Graduate School of Business**

The Stanford Venture Studio is an entrepreneurial hub and collaborative learning community for students across all disciplines and at any stage of entrepreneurship.

Through a range of events, programs and services, the Stanford Venture Studio supports students who are new to entrepreneurship and curious to learn more, as well as those that are ready to launch their next ad(venture).

Highlights of the Stanford Venture Studio's offering include:

- Co-working space with tools to ideate, prototype, and experiment
- Skills and needs-based workshops and training
- One-to-one advising with founders, venture capitalists, and industry experts
- Online resource kit with recommendations for tools, guides, and service providers
- Active peer collaboration and support from students and alumni
- Social activities to foster community connections
- Close ties with clubs, organizations, and programs across campus

OTL has partnered with the Stanford Venture Studio to offer all its benefits and resources to OTL's iFarm Teams.

[venturestudio.stanford.edu](http://venturestudio.stanford.edu)

### **StartX**

StartX is a non-profit organization with a mission to accelerate the development of Stanford's top entrepreneurs through experiential education. StartX companies receive mentoring, advice and other resources.

[startx.com](http://startx.com)

### **TomKat Center's Innovation Transfer Program**

The TomKat Center for Sustainable Energy has an Innovation Transfer Program that helps Stanford inventors bridge the gap between research and commercialization. They award grants to develop prototypes, refine business plans, and conduct customer trials and market research. Teams working on funded projects are assigned an industry mentor for ongoing guidance in

how best to externalize their innovation by assessing market opportunities, planning for commercialization, exploring strategic partnerships, or preparing to launch a start-up.

[tomkat.stanford.edu/innovation-transfer](http://tomkat.stanford.edu/innovation-transfer)

## ENTREPRENEURSHIP CLASSES OFFERED FOR STANFORD STUDENTS

Stanford offers a wide variety of classes on entrepreneurship which reside across the University in the Law School, the GSB, the School of Engineering and the School of Medicine. For example:

**Design for Extreme Affordability** is a two quarter, multidisciplinary, project-based course open to Stanford University students. Students work in teams and use design thinking methods to develop products and services that serve the needs of the world's poor.

**The GSB** offers several courses related to entrepreneurship. Startup Garage, one of the GSB's experiential course offerings, is an intensive hands-on, project-based course in which students apply the concepts of design thinking, engineering, finance, business, and organizational skills to design and test new business concepts that address real-world needs. Visit the Center for Entrepreneurial Studies' website to learn more about the entrepreneurship course offerings. [gsb.stanford.edu/ces](http://gsb.stanford.edu/ces)

**Lean LaunchPad** (ENGR 245) is a class by Professor Steve Blank that was designed for scientists and engineers but open to all Stanford students. It provides real world, hands-on learning on what it's like to actually start a high tech company using the Lean Startup methodology. Students learn three key ideas: 1) how to use a business model canvas to articulate each of their key commercialization hypotheses; 2) how to get out of the building to test those hypotheses using a formal customer development process; and 3) how to build their product incrementally and iteratively using agile development to get feedback from potential customers. This class was adopted by the National Science Foundation and National Institutes of Health as the curriculum for its Innovation Corps. Many of the course materials can be found on Steve's website. [steveblank.com/slides](http://steveblank.com/slides)

**STVP** collaborates with Stanford's Department of Management Science and Engineering to deliver about 30 introductory and advanced entrepreneurship and innovation courses for both undergraduate and graduate Stanford students. From large lectures to focused cohort experiences, courses dive deep into the areas of marketing, strategy, innovation, organizational behavior, creativity, finance, law, venture formation and more. [stvp.stanford.edu/courses](http://stvp.stanford.edu/courses)

## OUTSIDE RESOURCES

### California Life Sciences Association (CLSA)

CLSA and its affiliate the California Life Sciences Institute are committed to ensuring that life sciences entrepreneurs connect to the capital and resources needed to sustain critical innovation in the industry. By connecting the strength and wisdom of the Bay Area's nearly 1000 life science companies, they are able to provide entrepreneurs with the resources and knowledge to help grow and nurture the next generation of life sciences giants. [califesciences.org/entrepreneur-services](http://califesciences.org/entrepreneur-services)

### Entrepreneurship.org

Created by the Ewing Marion Kauffman Foundation, Entrepreneurship.org was formed as a free, online international resource designed to help build entrepreneurial economies. This site features a vast array of content and resources to assist entrepreneurs, business mentors, policy makers, academics and investors through each phase of the entrepreneurial process. [www.entrepreneurship.org](http://www.entrepreneurship.org)

### How to Build a Startup

Professor Steve Blank offers an open, online version of the Lean LaunchPad class through Udacity. [www.udacity.com/course/how-to-build-a-startup--ep245](http://www.udacity.com/course/how-to-build-a-startup--ep245)

### innovation DAILY

innovation DAILY is an electronic newsletter with selected innovation-related articles from around the world. The articles are related to innovation, funding for innovative companies, and best practices for innovation-based economic development. Users can access articles at the website or register to receive the free newsletter daily. [www.innovationamerica.us/index.php/innovation-daily](http://www.innovationamerica.us/index.php/innovation-daily)

## SVForum

SVForum fosters innovation, entrepreneurship and leadership within the Silicon Valley ecosystem of individuals and businesses participating in emerging technologies. They create connections and community, provide education and access to resources, link the global business community to Silicon Valley, and facilitate the exchange of unbiased knowledge, insights and best practices.

[www.svforum.org](http://www.svforum.org)

## Venture Capital Firms and Service Providers

There are many VC's and business service providers who have worked with Stanford start-up companies in the past. OTL Licensing Associates or Liaisons can provide a partial list of these firms to Stanford inventors as needed.

## WRITING A BUSINESS PLAN

The following publications and websites provide guidance for writing a business plan:

- **Lean LaunchPad** – the course materials from this class by Professor Steve Blank provide guidance on developing business models.  
[steveblank.com/slides](http://steveblank.com/slides)
- **MS&E 273 Technology Venture Formation Class Resources** – includes books, additional reading, links and financial models.  
[www.stanford.edu/class/msande273/resources.html](http://www.stanford.edu/class/msande273/resources.html)
- **Osterwalder and Pigneur**, *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers* (Wiley, 2010).  
[www.businessmodelgeneration.com](http://www.businessmodelgeneration.com)
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